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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SWERDLOW, DANIEL	

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 10/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/719,771	ELLISON, RICHARD D.	
	Examiner	Art Unit	
	Daniel Swerdlow	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 through 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US Patent 5,267,322) in view of Rothschild et al. (US Patent 5,487,102).

3. Regarding Claim 1, Smith discloses an automatic gain control comprising: signal level measurement (i.e., a module to measure power level) (Fig. 3, step 312; column 11, lines 9-23) for a stream of frames representing voice signals for conversion to audible signals (i.e., outgoing voice signal stream) (column 7, lines 58-69; column 8, lines 38-42); gain value adjustment (i.e., a gain factor setting module) (Fig. 3, steps 326, 330; column 12, lines 38-63) that sets gain by comparing signal level to thresholds (Fig. 3, steps 326,330); and application of gain (i.e., a gain adjustment module) (Fig. 3, steps 328, 332, 334, 336; column 12, lines 38-63) by applying the gain value to maintain a preferred desired average output level on the telephone line (i.e., to operate within compliance of a PSTN (column 14, lines 1-3). Therefore, Smith anticipates all elements except adjusting gain before the signal stream enters an output channel. Rothschild discloses a voice signal interface (Fig. 3) that applies transmit level control (60) to a voice signal inboard of a channel bank (18) and trunk interface (58) (i.e., before it enters an output channel) (column 4, lines 38-42). Rothschild further discloses that such an arrangement provides consistent output levels under varying input conditions (column 2, lines 12-19). It would have

been obvious to one skilled in the art at the time of the invention to apply transmit level control to a voice signal before it enters an output channel, as taught by Rothschild to the system taught by Smith for the purpose of realizing the aforesaid advantages.

4. Regarding Claim 2, Smith further discloses use of two thresholds (Fig. 3, steps 326, 380; column 12, lines 38-63).

5. Regarding Claim 3, Smith further discloses simultaneous use of signal level values for current and future subframes (Fig. 3, step 312; column 11, lines 9-11). The simultaneous use of signal level values from different times inherently includes storing measured levels. In addition, Smith discloses the use of a program variable representing a gain value (i.e., storing a previously applied gain value) (column 12, lines 41-44).

6. Regarding Claim 4, Smith further discloses applying gain values to maintain a level between a low threshold and a high threshold (column 12, lines 38-63).

7. Regarding Claim 5, Smith further discloses multiplying the gain value to the current signal value (column 11, lines 41-44).

8. Regarding Claim 6, Smith further discloses applying (i.e., adding) the gain value to the current signal value (column 11, lines 41-44).

9. Regarding Claim 7, in addition to the elements cited above apropos of Claim 1, Smith further discloses a TDM interface (Fig. 1B, reference 63; column 6, lines 3-7) the corresponds to the switch claimed and assigns serial bit blocks (i.e., receives a voice signal stream) from the TDM interface (i.e., a voice signal source) to one of the APU's that includes the gain control function that corresponds to the gain adjustment module claimed. In addition, Smith further discloses measuring signal level at two future and one current subframe (i.e., a number of

segments) (column 11, lines 9-11). Further, Smith discloses outputting stream of frames representing voice signals for conversion to audible signals (i.e., the voice signal stream is outgoing) (column 8, lines 38-42). Therefore, Smith anticipates all elements except adjusting gain before the signal stream enters an output channel. Rothschild discloses a voice signal interface (Fig. 3) that applies transmit level control (60) to a voice signal inboard of a channel bank (18) and trunk interface (58) (i.e., before it enters an output channel) (column 4, lines 38-42). Rothschild further discloses that such an arrangement provides consistent output levels under varying input conditions (column 2, lines 12-19). It would have been obvious to one skilled in the art at the time of the invention to apply transmit level control to a voice signal before it enters an output channel, as taught by Rothschild to the system taught by Smith for the purpose of realizing the aforesaid advantages.

10. Regarding Claim 8, Smith further discloses sending a gain adjusted frame as a transmit frame on the TDM highway (i.e., adjusting gain before the signal has entered an output channel) (column 8, lines 62-65).

11. Regarding Claim 9, Smith further discloses simultaneous use of signal level values for current and future subframes (Fig. 3, step 312; column 11, lines 9-11). The simultaneous use of signal level values from different times inherently includes storing measured levels.

12. Regarding Claim 10, Smith further discloses taking the sum of the values of the points in the subframes (column 11, lines 13-16).

13. Regarding Claim 11, Smith further discloses computing the mean of the values of the points in the subframes (column 11, lines 10-12).

14. Regarding Claim 12, Smith further discloses applying gain values to maintain a level below a high threshold (column 12, lines 38-63). In addition, Smith further discloses a table of signal level values and associated gain values, each signal level value corresponding to one of the at least two different high threshold levels claimed (Fig. 6, reference 600; column 12, lines 54-62).

15. Regarding Claim 13, Smith further discloses applying gain values to maintain a level between a low threshold and a high threshold (column 12, lines 38-63).

16. Regarding Claim 14, Smith discloses a gain control system comprising: line interfaces (column 3, line 66 through column 4, line 2) that correspond to the voice signal source claimed and provide digital voice data (i.e., produces a voice signal stream) and are coupled to the public switched network (column 5, lines 27-29); Smith further discloses a voice messaging system (Fig. 1A, reference 1; column 5, lines 5-7) that corresponds to the media platform claimed and is coupled to the public switched network (column 5, lines 27-29) and the line interfaces (column 3, line 66 through column 4, line 2) that correspond to the voice signal source claimed. Smith further discloses: a TDM interface (Fig. 1B, reference 63; column 6, lines 3-7) the corresponds to the switch claimed and assigns serial bit blocks (i.e., receives a voice signal stream) from the TDM interface (i.e., a voice signal source); an automatic gain control (Fig. 2A, reference 110; column 5, lines 5-7) that corresponds to the power level adjusting means claimed to maintain a preferred desired average output level on the telephone line (i.e., to operate within compliance of a PSTN (column 14, lines 1-3); and line interface modules (Fig. 1A, reference 24,26; column 5, lines 27-39) that correspond to the output channel claimed. Further, Smith discloses outputting stream of frames representing voice signals for conversion to audible signals (i.e., the voice

signal stream is outgoing) (column 8, lines 38-42). Therefore, Smith anticipates all elements except adjusting gain before the signal stream enters an output channel. Rothschild discloses a voice signal interface (Fig. 3) that applies transmit level control (60) to a voice signal inboard of a channel bank (18) and trunk interface (58) (i.e., before it enters an output channel) (column 4, lines 38-42). Rothschild further discloses that such an arrangement provides consistent output levels under varying input conditions (column 2, lines 12-19). It would have been obvious to one skilled in the art at the time of the invention to apply transmit level control to a voice signal before it enters an output channel, as taught by Rothschild to the system taught by Smith for the purpose of realizing the aforesaid advantages.

17. Regarding Claim 15, Smith further discloses the gain control implemented in assembly code software on a DSP (i.e., having a set of computer executable instructions) (column 6, lines 35-37).

18. Regarding Claim 16, Smith further discloses signal level measurement (i.e., measurement module) (Fig. 3, step 312; column 11, lines 9-23); gain value adjustment (i.e., a gain factor setting module) (Fig. 3, steps 326, 330; column 12, lines 38-63) that sets gain by comparing signal level to thresholds (Fig. 3, steps 326,330); and application of gain (i.e., a gain adjustment module) (Fig. 3, steps 328, 332, 334, 336; column 12, lines 38-63) by applying the gain value.

19. Regarding Claim 17, Smith further discloses the signal level measurement that corresponds to the measurement module claimed measuring signal (i.e., power) level (Fig. 3, step 312; column 11, lines 9-23) for a stream of frames representing voice signals (i.e., voice signal stream) (column 7, lines 58-69.

20. Regarding Claim 18, Smith further discloses the gain value adjustment that corresponds to the gain factor setting module claimed (Fig. 3, steps 326, 330; column 12, lines 38-63) sets gain by comparing signal level to thresholds (i.e., based on measurement information from the measurement module (Fig. 3, steps 326,330).

21. Regarding Claim 19, Smith further discloses the application of gain that corresponds to the gain adjustment module claimed (Fig. 3, steps 328, 332, 334, 336; column 12, lines 38-63) applying the gain value based on the gain value adjustment that corresponds to the gain factor setting module claimed (Fig. 3, steps 326, 330; column 12, lines 38-63).

22. Regarding Claim 20, Smith further discloses the gain control implemented in assembly code software on a DSP (i.e., including program instructions executed on a processor) (column 6, lines 35-37) within the voice messaging system that corresponds to the media platform claimed (Fig. 1C, reference 72; column 7, lines 61-64).

23. Regarding Claim 21, Smith discloses an automatic gain control (i.e., method of adjusting power level) comprising: receiving a stream of frames representing voice signals (i.e., voice signal stream) (column 7, lines 58-69); signal level measurement (i.e., measuring a power level) (Fig. 3, step 312; column 11, lines 9-23) for current and future subframes (i.e., at a number of points in time) (Fig. 3, step 312; column 11, lines 9-11); comparing signal level to thresholds (Fig. 3, steps 326,330); and application of gain (i.e., adjusting power level) (Fig. 3, steps 328, 332, 334, 336; column 12, lines 38-63) by applying a gain value based on the comparison (Fig. 3, steps 326, 330; column 12, lines 38-63) to maintain a preferred desired average output level on the telephone line (i.e., to operate within compliance of a PSTN (column 14, lines 1-3). Further, Smith discloses outputting stream of frames representing voice signals for conversion to audible

signals (i.e., the voice signal stream is outgoing) (column 8, lines 38-42). Therefore, Smith anticipates all elements except adjusting gain before the signal stream enters an output channel. Rothschild discloses a voice signal interface (Fig. 3) that applies transmit level control (60) to a voice signal inboard of a channel bank (18) and trunk interface (58) (i.e., before it enters an output channel) (column 4, lines 38-42). Rothschild further discloses that such an arrangement provides consistent output levels under varying input conditions (column 2, lines 12-19). It would have been obvious to one skilled in the art at the time of the invention to apply transmit level control to a voice signal before it enters an output channel, as taught by Rothschild to the system taught by Smith for the purpose of realizing the aforesaid advantages.

24. Regarding Claim 22, Smith further discloses use of two thresholds (Fig. 3, steps 326, 380; column 12, lines 38-63).

25. Regarding Claim 23, Smith further discloses adjusting power level (Fig. 3, steps 328, 332, 334, 336; column 12, lines 38-63) by applying a gain value based on the comparison (Fig. 3, steps 326, 330; column 12, lines 38-63).

26. Regarding Claim 24, Smith further discloses signal level measurement (i.e., measuring a power level) (Fig. 3, step 312; column 11, lines 9-23) for current and future subframes (i.e., segments) (Fig. 3, step 312; column 11, lines 9-11).

27. Regarding Claim 25, Smith further discloses reducing gain only if signal level measurement (i.e., measuring a power level) (Fig. 3, step 312; column 11, lines 9-23) for all three subframes (i.e., segments) (Fig. 3, step 312; column 11, lines 9-11) are below a threshold. As such, Smith discloses comparing the level of each segment with the threshold.

28. Regarding Claim 26, Smith further discloses using the mean (i.e., average) of the values of the points in the subframes (column 11, lines 10-12).

29. Regarding Claim 27, in addition to the elements cited above apropos of Claim 21, Smith further discloses maintaining instructions for the method on disk drives (i.e., a computer readable medium) (column 7, lines 36-39).

30. Regarding Claim 28, Smith further discloses a table of signal level values and associated gain values (i.e., adjusting power level in differing increments based on proximity of measured power to threshold) (Fig. 6, reference 600; column 12, lines 54-62).

31. Regarding Claim 29, Smith further discloses using the mean (i.e., average) of the values of the points in the subframes (column 11, lines 10-12).

32. Regarding Claim 30, Smith further discloses use of signal level values for current and future subframes (i.e., replacement of oldest value with new value) (Fig. 3, step 312; column 11, lines 9-11).

33. Regarding Claim 31, Smith further discloses interface with a T1 channel (Fig. 1A, reference 26; column 5, lines 33-39).

34. Regarding Claim 32, Smith further discloses the voice data stream stored in memory (Fig. 2A, reference 100; column 12, lines 38-42).

35. Regarding Claim 33, Smith further discloses a text-to-speech application (column 7, lines 21-25).

36. Regarding Claim 34, Smith discloses an automatic gain control (i.e., method of adjusting power level) comprising: receiving a stream of frames representing voice signals (i.e., voice signal stream) (column 7, lines 58-69); signal level measurement (i.e., measuring a power level)

(Fig. 3, step 312; column 11, lines 9-23) for current and future subframes (i.e., at a number of points in time) (Fig. 3, step 312; column 11, lines 9-11); comparing signal level to thresholds (Fig. 3, steps 326,330); and application of gain (i.e., adjusting power level) (Fig. 3, steps 328, 332, 334, 336; column 12, lines 38-63) by applying a gain value based on the comparison (Fig. 3, steps 326, 330; column 12, lines 38-63) over a period of time (i.e., gradually) (column 12, lines 45-49) to maintain a preferred desired average output level on the telephone line (i.e., to operate within compliance of a PSTN (column 14, lines 1-3). Further, Smith discloses outputting stream of frames representing voice signals for conversion to audible signals (i.e., the voice signal stream is outgoing) (column 8, lines 38-42). Therefore, Smith anticipates all elements except adjusting gain before the signal stream enters an output channel. Rothschild discloses a voice signal interface (Fig. 3) that applies transmit level control (60) to a voice signal inboard of a channel bank (18) and trunk interface (58) (i.e., before it enters an output channel) (column 4, lines 38-42). Rothschild further discloses that such an arrangement provides consistent output levels under varying input conditions (column 2, lines 12-19). It would have been obvious to one skilled in the art at the time of the invention to apply transmit level control to a voice signal before it enters an output channel, as taught by Rothschild to the system taught by Smith for the purpose of realizing the aforesaid advantages.

37. Regarding Claim 35, Smith further discloses a table of signal level values and associated gain values (i.e., changing an amount of adjustment based on proximity of measured power to target) (Fig. 6, reference 600; column 12, lines 54-62).

38. Regarding Claim 36, Smith further discloses a table of at least four signal level values and associated gain values (i.e., comparing power levels to four thresholds) (Fig. 6, reference 600; column 12, lines 54-62).

39. Regarding Claim 37, Smith further discloses maintaining a target output level (column 14, lines 1-3). As such, Smith discloses a larger adjustment for values further from the target.

Response to Arguments

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 571-272-7531. The examiner can normally be reached on Monday through Friday between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh H. Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Swerdlow
Primary Examiner
Art Unit 2615

ds
20 October 2006